

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 3-16, and 18-20 are currently pending in the present application. Claims 2 and 17 have been previously canceled. Claim 1 has been amended by way of the present amendment. Support for the amendment may be found, at least, in Figure 1 and the corresponding description. Thus, no new matter has been added.

In the outstanding Office Action, the title in the specification was objected to; Claims 1, 4, 5, 12, and 20 were rejected under 35 U.S.C. §102(b) as anticipated by Amako et al. (U.S. Pat. No. 5,497,254, hereinafter "Amako '254"); Claim 3 was rejected under 35 U.S.C. §103(a) as unpatentable over Amako '254 in view of Hamano et al. (U.S. Pat. Pub. No. 2004/0179253, hereinafter "Hamano"); Claims 6, 7, and 10 were rejected under 35 U.S.C. §103(a) as unpatentable over Amako '254 in view of Amako et al. (U.S. Pat. No. 5,589,955, hereinafter "Amako '955"); Claims 8, 9, and 11 were rejected under 35 U.S.C. §103(a) as unpatentable over Amako '254 in view of Thompson, Jr. et al. (U.S. Pat. No. 6,717,104, hereinafter "Thompson"); Claim 13 was rejected under 35 U.S.C. §103(a) as unpatentable over Amako '254 in view of Yamada et al. (U.S. Pat. Pub. No. 2003/0152756, hereinafter, "Yamada"); and Claims 14-16, 18, and 19 were indicated as allowable.

As an initial matter, Applicants thank Examiner Bennett for indicating Claims 14-16, 18, and 19 as allowable.

With regard to the objection to the title in the specification, Applicants have amended the title to more clearly reflect the claimed features. Accordingly, it is respectfully requested that the objection to the title be reconsidered and withdrawn.

Addressing now the rejection of Claims 1, 4, 5, 12, and 20 under 35 U.S.C. §102(b) as anticipated by Amako '254, Applicants respectfully traverse this rejection.

Amended Claim 1 recites, in part,

a laser source;  
a spatial phase modulator configured to modulate a phase of a laser beam emitted from the laser source;  
a focusing optical unit configured to guide the phase-modulated laser beam onto a surface to be processed to reproduce a pattern image on the processed surface;  
a computer configured to calculate separately a horizontal hologram data set representing displacement of the pattern image in a direction parallel to the processed surface and a vertical hologram data set representing displacement of the pattern image in a direction perpendicular to the processed surface, the horizontal hologram data set and the vertical hologram data set being distinct from each other; and  
a synthetic data generator configured to generate synthetic data by combining hologram image data representing the pattern image to be processed with position displacement hologram data for shifting the pattern image to a prescribed position, said position displacement hologram data including either the horizontal hologram data set, the vertical hologram data set, or a combination of the horizontal and vertical hologram data sets, said synthetic data being input to the spatial phase modulator for the phase modulation of the laser beams.

Amako '254, for example, describes a lens array 1903 consisting of spherical lenses having the same focal length, and a composite lens 1902 which is a combination of four spherical lenses having different focal lengths.<sup>1</sup>

However, nothing in Amako '254 describes combining hologram image data representing the pattern image to be processed with position displacement hologram data for shifting the pattern image to a prescribed position, said position displacement hologram data including either the horizontal hologram data set, the vertical hologram data set, or a combination of the horizontal and vertical hologram data sets.

Furthermore, Amako '254 fails to describe *calculating separately a horizontal hologram data set* representing displacement of the pattern image in a direction parallel to the processed surface *and a vertical hologram data set* representing displacement of the

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<sup>1</sup> Amako '254: Figures 18, 19, and 20, and corresponding descriptions

pattern image in a direction perpendicular to the processed surface, the horizontal hologram data set and the vertical hologram data set *being distinct from each other*, as is recited in Claim 1.

Figure 19 of Amako '254, for example, merely describes that an image may be *adjusted* vertically or horizontally. For example, as noted above, Amako '254 describes that “composite lens 1902 is a combination of four spherical lenses having difference focal lengths,”<sup>2</sup> which may suggest a vertical adjustment, and that “four spots can be formed from a single beam at different positions on the liquid crystal device using composite lens 1902,”<sup>3</sup> which may suggest a horizontal adjustment.

However, although Amako '254 may, at best, disclose certain vertical or horizontal *adjustments*, Amako '254 does not describe horizontal *and* vertical *data sets*.

Additionally, Amako '254 does not describe or suggest *calculating separately a horizontal hologram data set ... and a vertical hologram data set, the horizontal hologram data set and the vertical hologram data set being distinct from each other*, as is recited in Claim 1.

In addition, the outstanding Office Action concedes, in the “Allowable Subject Matter” section on page 12, that Amako '254 “does *not* clearly disclose a method/process wherein the two different [horizontal and vertical hologram] data sets are calculated separately” [emphasis added].

Claim 1 recites a computer configured to *calculate separately a horizontal hologram data set* representing displacement of the pattern image in a direction parallel to the processed surface *and a vertical hologram data set* representing displacement of the pattern image in a direction perpendicular to the processed surface, *the horizontal hologram data set and the vertical hologram data set being distinct from each other*.

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<sup>2</sup> Amako '254: column 13, lines 46-47

<sup>3</sup> Amako '254: column 13, lines 47-49

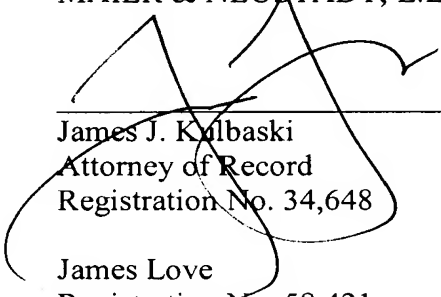
Therefore, since, as the Office concedes, Amako '254 fails to disclose that "the two different [horizontal and vertical hologram] data sets are calculated separately," and Claim 1 recites such features, it is respectfully submitted that Amako '254 does not describe, suggest, or render obvious all of the features of Claim 1.

Accordingly, based on the aforementioned reasons, Applicants respectfully submit that independent Claim 1, and claims depending therefrom, are allowable.

Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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